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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,692	06/23/2006	Henrik Sjoland	0110-058	9598

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EXAMINER

HU, RUI MENG

ART UNIT	PAPER NUMBER
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2618

NOTIFICATION DATE	DELIVERY MODE
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10/03/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

tammy@ppglaw.com

Office Action Summary

Application No.

10/549,692

Applicant(s)

SJOLAND ET AL.

Examiner

RuiMeng Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/17/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's election of **claims 1-13** in the reply filed on 08/14/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-6 and 9** are rejected under 35 U.S.C. 102(b) as being anticipated by **Geddes et al. (US Patent 5263198)**.

Consider **claim 1**, Geddes et al. disclose a passive mixer (column 2 lines 10-29, figure 2, a passive field effect transistor (FET) mixer 22) for converting a first signal having a first frequency (figure 2, RF signal) to a second signal having a second frequency (figure 2, IF signal), comprising: mixing means (mixer 22), a first terminal (the first terminal where the IF signal is outputted), a second terminal (the second terminal where the LO signal 10 is inputted) and a third terminal (the third terminal where the RF signal is inputted), for providing the second signal (IF signal) by mixing a third signal having a third frequency (LO signal) provided as input at said second terminal and the first signal (RF signal 28) provided as input at either the first or the third terminal (at the

third terminal); and a feedback circuit (figure 2, feedback circuit comprising capacitor 16 and MRB 20) operatively connected to said third and said second terminal (figure 2).

Consider **claim 2 as applied to claim 1**, Geddes et al. disclose wherein the feedback circuit is a bootstrap circuit (figure 2, bootstrap capacitor 16).

Consider **claim 3 as applied to claim 1**, Geddes et al. disclose wherein the feedback circuit comprises a low pass filter (figure 1, DC blocking filter 16).

Consider **claim 4 as applied to claim 3**, Geddes et al. disclose wherein the filter comprises a capacitor (figure 2, capacitor 80) connected between said second terminal and said mixing means, and a resistor (figure 2, MRB 20) connected between said third terminal and the connection between said capacitor and said mixing means.

Consider **claim 5 as applied to claim 1**, Geddes et al. disclose wherein said mixing means is a voltage controlled switch (GaAs FET provides voltage controlled switch characteristics).

Consider **claim 6 as applied to claim 1**, Geddes et al. disclose wherein said mixing means comprises a FET transistor switch (figure 2, FET mixer 22) having either its drain or source operatively connected to said first terminal (said first terminal (IF signal) connected to the FET source), its gate operatively connected to said second terminal (LO port connected to the FET gate), and either its source or drain operatively connected to said third terminal (said third terminal (RF signal) connected to the FET drain).

Consider **claim 9 as applied to claim 1**, Geddes et al. disclose wherein the mixer is included in electronic equipment (column 1 lines 11-19, column 2 lines 26-29,

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figure 4, column 4 lines 27-36, the mixer is capable of operating at high frequency range in an electronic device).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. **Claims 7, 8 and 10-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Geddes et al. (US Patent 5263198)**.

Consider **claim 7 as applied to claim 6**, Geddes et al. fail to disclose characterized in that said FET transistor is an NMOS transistor.

However, the teaching of using NMOS transistor in mixing means is well known in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques into the art of Geddes et al. as to include a NMOS transistor as a second embodiment.

Consider **claim 8 as applied to claim 1**, Geddes et al. fail to disclose wherein the mixer is a balanced mixer comprising an even number of mixing means.

However, the teaching of double balanced mixer is well known in the art.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques into the art of Geddes et al. as to modify the mixer circuit in figure 2 into a double balanced mixer as a second embodiment.

Consider **claim 10 as applied to claim 9**, Geddes et al. fail to disclose wherein the electronic equipment is a portable communication equipment having a supply voltage of less than 2V.

However, the teaching of a portable communication device utilizing a mixer is well known in the art, and according to the reference specification, the mixer is capable

of operating in a portable communication device having a supply voltage of less than 2V.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques into the art of Geddes et al. as to utilize the mixer circuit in a portable communication device having a supply voltage of less than 2V.

Consider **claim 11 as applied to claim 9**, Geddes et al. fail to disclose wherein the electronic equipment is a mobile radio terminal, a mobile telephone, a pager, or a communicator.

However, the teaching of a mobile communication device utilizing a mixer is well known in the art, and according to the reference specification, the mixer is capable of operating in a mobile communication device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques into the art of Geddes et al. as to utilize the mixer circuit in a mobile communication device.

Consider **claim 12 as applied to claim 9**, Geddes et al. fail to disclose wherein the electronic equipment is adapted to operate in a wireless local area network.

However, the teaching of a wireless mobile communication device utilizing a mixer is well known in the art, and according to the reference specification, the mixer is capable of operating in a wireless mobile communication device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques into the art of Geddes et al. as to utilize the mixer circuit in a wireless mobile communication device.

Consider **claim 13 as applied to claim 9**, Geddes et al. fail to disclose wherein the electronic equipment is communication equipment adapted to provide short-range supplementary communication according to Bluetooth.RTM. technology.

However, the teaching of a Bluetooth device utilizing a mixer is well known in the art, and according to the reference specification, the mixer is capable of operating in such device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques into the art of Geddes et al. as to utilize the mixer circuit in a Bluetooth device.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed**

to: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105.


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The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RuiMeng Hu
R.H./rh
September 26, 2007


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
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